

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-20 (Canceled).

Claim 21 (Currently Amended): A quality-of-service reservation method for managing network resources and/or service parameters needed for symmetric real-time multimedia applications and/or data services running on a mobile node and a correspondent node by signaling resource control information along specific routing paths between the nodes, the method comprising:

embedding resource control information to be transmitted between the mobile node and the correspondent node in a message which is sent via the routing path of [[the]] a reserved connection for the nodes; [[and]]

disseminating resource control information between the mobile node and the correspondent node by using the same routing path through the network in both directions; and

setting those attribute values carried in an IP datagram header to zero which permit reservation end points to interpret the situation of routing asymmetry if upstream and downstream paths for a bidirectional reservation do not follow identical routes at a specific routing node along the reserved routing path.

Claim 22 (Previously Presented): A method according to claim 21, wherein the mobile node initiates a resource reservation request message indicating demand for a predefined amount of network resources simultaneously for both directions.

Claim 23 (Previously Presented): A method according to claim 21, wherein

the correspondent node initiates a resource reservation request message indicating demand for a predefined amount of network resources simultaneously for both directions.

Claim 24 (Currently Amended): A method according to claim 22, wherein the initiator of the resource reservation request message generates a unique reservation identifier associating a bidirectional connection to achieve a specific forwarding behaviour which remains unchanged during the lifetime of an [[the]] associated flow of the bidirectional connection.

Claim 25 (Previously Presented): A method according to claim 22, further comprising:

allocating network resources by using resource control information piggy-packed in an IP datagram, monitoring the network resources, or simultaneously allocating and monitoring at the same time for both directions of the resource reservation request message, wherein resource control information for both directions of the reserved routing path is embedded in a same IP datagram.

Claim 26 (Previously Presented): A method according to claim 21, wherein resource control information for each direction of a reservation is piggybacked via resource information elements that are a part of a header extension of an IP datagram, wherein each resource information element represents either a resource attribute along the reserved routing path, associated with a quantifiable resource metric for either one or both directions of the flow, or a flow attribute for an individual flow or flow aggregate, associated with quantifiable and non-quantifiable flow context information either for one or both directions of the flow.

Claim 27 (Previously Presented): A method according to claim 26, wherein the resource information elements describe resource control information for upstream direction from the initiator towards the receiver or downstream direction from the receiver towards the initiator of a resource reservation request message or for both directions together, wherein upstream and downstream direction are uniquely identified by the mobile node and the correspondent node due to their role in the reservation procedure either as initiator or receiver of a resource reservation request message.

Claim 28 (Previously Presented): A method according to claim 26, wherein the resource information elements are organized in a modular fashion for each flow, wherein the node that originates the resource control information determines the number of resource information elements to be placed into the IP datagram header.

Claim 29 (Currently Amended): A method according to claim 26 [[21]], wherein [[each]] at least one of the resource information elements element includes a field for the monitored attribute value and attribute requirement specification fields specifying resource-attribute-specific flow requirements, which are described by an upper threshold defining the maximum value and/or a lower threshold defining the minimum value for the respective resource attribute.

Claim 30 (Previously Presented): A method according to claim 21, further comprising:

simultaneously monitoring information about available resources for both directions of the reservation along the reserved routing path between the mobile node and the correspondent node;

for every node along the reserved routing path, determining actual resource attribute values for upstream and downstream directions; and

if at any node along the reserved routing path a monitored resource attribute either for the upstream or downstream direction or for both directions has a value which is less than the correspondent monitored attribute value that is carried in an IP datagram header, assigning the new value to the resource information element of the IP datagram header, which enables the receiver of the resource control information to determine current resource values for both directions.

Claim 31 (Previously Presented): A method according to claim 21, further comprising:

sending a resource reservation request message describing a set of attribute requirement specifications and controlling the resource allocation procedure either for one or both directions of the resource reservation by either the mobile node or the correspondent node; and

based on such a resource reservation request message, determining resource attribute values that should be allocated for the upstream direction, the downstream direction, or both directions at the same time by every forwarding node along the reserved routing path.

Claim 32 (Previously Presented): A method according to claim 21, wherein resource control information for different bidirectional flows is piggy-packed in a same IP datagram, wherein for each flow a reservation identifier information element

referring to additional flow and resource information elements in the header of the IP datagram is attached to the IP datagram header and a grouping of reservation identifiers and other resource information elements determines membership of the information to a specific flow.

Claim 33 (Previously Presented): A method according to claim 21, wherein either the mobile node or the correspondent node determines on an IP layer whether bidirectional or unidirectional resource control information can be inserted into an IP datagram that is ready to be transmitted to the networking interface or whether a separate IP datagram needs to be generated for that purpose.

Claim 34 (Previously Presented): A method according to claim 33, wherein resource control information is placed in any IP datagram which follows the reserved routing path between the initiator and the receiver of a resource reservation request message.

Claim 35 (Previously Presented): A method according to claim 21, further comprising:
recognizing conditions of insufficient resources along the routing path for upstream and downstream directions at the correspondent node by comparing monitored attribute values with the attribute requirement specifications in the resource information elements of an arriving IP datagram.

Claim 36 (Previously Presented): A method according to claim 21, further comprising:

setting monitored resource attribute values of specific resource information elements specified in an IP datagram header to zero in case one or more forwarding nodes do not support the resource attributes.

Claim 37 (Canceled).

Claim 38 (Previously Presented): A method according to claim 21, further comprising:

interpreting resource reservation request messages with a value zero for one or more attribute requirement specifications as explicit release messages by forwarding nodes along the reserved routing path and by the initiator or receiver of the resource reservation request messages; and

associating values of the attribute requirement specifications with removal of flow-specific reservation state information in the forwarding nodes along the reserved routing path.

Claim 39 (Previously Presented): A method according to claim 21, further comprising:

interpreting resource reservation request messages with a value unequal to zero for one or more attribute requirement specifications as explicit setup messages by forwarding nodes along the reserved routing path and by the receiver of the resource reservation request messages; and

associating values of these attribute requirement specifications with installation of flow-specific reservation state information in the forwarding nodes along the reserved routing path.

Claim 40 (Previously Presented): A method according to claim 21, further comprising:

piggy-packing a flow information element specifying a type of reservation as either bidirectional or unidirectional in an IP datagram header of a reservation setup message; and interpreting the flow information element at forwarding nodes along the reserved routing path to ensure correct installation of reservation state information.